Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for securely controlling transmission of digital data comprising the steps of:

receiving said digital data;

grouping said digital data into a number of data segments by a computer;

forming a first segment checksum for each said data segment in accordance with a method for forming ~~type selected from the group consisting of~~ a hashing value ~~and a cryptographic one-way function~~;

forming a first commutative checksum by a commutative operation on said first segment checksums, wherein flow control for the data segments is negated by the commutative operation; and

cryptographically protecting said first commutative checksum by using a cryptographic operation.

2. (Currently Amended) A method for securely controlling transmission of digital data comprising the steps of:

receiving said digital data;

grouping the digital data into a number of data segments by a computer;

allocating a predetermined cryptographic commutative checksum to said digital data;

subjecting said cryptographic commutative checksum to an inverse cryptographic operation to form a first commutative checksum;

forming a second segment checksum for each said data segment in accordance with ~~a type selected from the group consisting of a hashing value and~~ a cryptographic one-way function;

forming a second commutative checksum by a commutative operation on said second segment checksums wherein flow control for the data segments is negated by the commutative operation; and

checking said second commutative checksum for a match with said first commutative checksum.

3. (Previously Presented) A method for forming and checking a first commutative checksum for digital data comprising the steps of:

grouping said digital data into a number of data segments by a computer;

forming a first segment checksum for each said data segment in accordance with a type selected from the group consisting of a hashing value and a cryptographic one-way function;

forming said first commutative checksum by a commutative operation on said first segment checksums, wherein flow control for the data segments is negated by the commutative operation;

cryptographically protecting said first commutative checksum by using at least one cryptographic operation, which forms a cryptographic commutative checksum;

subjecting said cryptographic commutative checksum to an inverse cryptographic operation to form a reconstructed first commutative checksum;

forming a second segment checksum for each said data segment of said digital data to which said first commutative checksum is allocated;

forming a second commutative checksum by a commutative operation on said second segment checksums wherein flow control for the data segments is negated by the commutative operation; and

checking said second commutative checksum for a match with said reconstructed first commutative checksum.

4-9 (Canceled).

10. (Currently Amended) An apparatus ~~An arrangement for forming a first commutative checksum for digital data which are grouped into a number of data segments, said arrangement~~ comprising:

an arithmetic and logic unit[[,]] configured to:

form a first segment checksum~~, which is formed~~ for each [[said]] of a plurality of data ~~segment~~ segments in accordance with a method of forming ~~type selected from the group consisting of~~ a hashing value; ~~and a cryptographic one-way function,~~

perform a commutative operation which forms [[said]] a first commutative checksum by operating on said segment checksums wherein flow control for the data segments is negated by the commutative operation[[,]]; and

perform a cryptographic operation which cryptographically protects said first commutative checksum.

11. (Currently Amended) An apparatus ~~arrangement for checking a predetermined first commutative checksum which is allocated to digital data which are grouped into a number of data segments, said arrangement~~ comprising:

an arithmetic and logic unit[[;]] configured to:

form a first segment checksum~~, formed~~ in accordance with ~~a type selected from the group consisting of a hashing value and~~ a cryptographic one-way function;

perform an inverse cryptographic operation to form a first cryptographic checksum from a cryptographic commutative checksum formed by a cryptographic operation wherein flow control for [[the]] data segments is negated by the commutative operation;

form a second segment checksum ~~which is formed for~~ each [[said]] data segment, wherein said second segment checksum is formed in accordance with ~~a type selected from the group consisting of a hashing value and~~ a cryptographic one-way function; and

perform a commutative operation which operates on said second segment checksums which forms a second commutative checksum wherein flow control for the data segments is negated by the commutative operation; and

a comparator ~~which checks~~ configured to check for a match between said second commutative checksum and said first commutative checksum.

12. (Currently Amended) An apparatus ~~arrangement~~ for forming and checking a first commutative checksum for digital data which is grouped into a number of data segments, said apparatus ~~arrangement~~ comprising:

an arithmetic and logic unit configured to:[[,]]

form a first segment checksum~~, which is formed~~ for each said data segment in accordance with a type selected from the group consisting of a hashing value and a cryptographic one-way function,

perform a commutative operation which forms said first commutative checksum by operating on said first segment checksums wherein flow control for the data segments is negated by the commutative operation,

perform a cryptographic operation which cryptographically protects said first commutative checksum,

form a cryptographic commutative checksum ~~formed~~ by said cryptographic operation,

perform an inverse cryptographic operation to form a first commutative checksum from said cryptographic commutative checksum,

form a second segment checksum ~~which is formed~~ for each said data segment of said digital data to which said first commutative checksum is allocated,

perform a commutative operation which operates on said second segment checksums which forms a second commutative checksum wherein flow control for the data segments is negated by the commutative operation, and

a comparator ~~which checks~~ configured to check for a match between said second commutative checksum and a reconstructed first commutative checksum, wherein said first and second segment checksum are formed in accordance with a type selected from the group consisting of a hashing value and a cryptographic one-way function.

13-21. (Canceled).

22. (Previously Presented) A method according to claim 1, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an asymmetric cryptographic method.

23. (Previously Presented) A method according to claim 2, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an asymmetric cryptographic method.

24. (Previously Presented) A method according to claim 3, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an symmetric cryptographic method.

25. (Previously Presented) A method according to claim 1, wherein:

said commutative operation exhibits the property of associativity.

26. (Previously Presented) A method according to claim 2, wherein:

said commutative operation exhibits the property of associativity.

27. (Previously Presented) A method according to claim 3, wherein:

said commutative operation exhibits the property of associativity.

28. (Previously Presented) A method according to claim 1, wherein said digital data and the first cryptographic, commutative checksum are archived.

29. (Previously Presented) A method according to claim 2, wherein said digital data and the prescribed cryptographic commutative checksum have been archived.

30. (Previously Presented) A method according to claim 3, wherein said digital data are secured which are processed corresponding to a network management protocol.

31. (Previously Presented) A method according to claim 1, further comprising the steps of:

protecting said digital data; and

processing said digital data in accordance with a network management protocol.

32. (Previously Presented) A method according to claim 2, further comprising the steps of:

protecting said digital data; and

processing said digital data in accordance with a network management protocol.

33. (Previously Presented) A method according to claim 3, further comprising the steps of:

protecting said digital data; and

processing said digital data in accordance with a network management protocol.

34-36. (Canceled)

37. (Currently Amended) An apparatus ~~arrangement~~ according to claim 10, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an asymmetric cryptographic method.

38. (Currently Amended) An apparatus ~~arrangement~~ according to claim 11, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an asymmetric cryptographic method.

39. (Currently Amended) An apparatus ~~arrangement~~ according to claim 12, wherein:

said cryptographic operation is an operation selected from the group consisting of a symmetric cryptographic method and an asymmetric cryptographic method.

40. (Currently Amended) An apparatus ~~arrangement~~ according to claim 10 wherein said commutative operation exhibits the property of associativity via the arrangement of said arithmetic and logic unit.

41. (Currently Amended) An apparatus ~~arrangement~~ according to claim 11 wherein said commutative operation exhibits the property of associativity via the arrangement of said arithmetic and logic unit.

42. (Currently Amended) An apparatus ~~arrangement~~ according to claim 12, wherein said commutative operation exhibits the property of associativity via the arrangement of said arithmetic and logic unit.

43. (Currently Amended) An apparatus ~~arrangement~~ according to claim 10, wherein:

said digital data and the first cryptographic, commutative checksum are archived.

44. (Currently Amended) An apparatus ~~arrangement~~ according to claim 11, wherein:

said digital data and the prescribed cryptographic commutative checksum have been archived.

45. (Currently Amended) An apparatus ~~arrangement~~ according to claim 12, wherein:

said digital data and the first cryptographic, commutative checksum are archived.

46. (Currently Amended) An apparatus ~~arrangement~~ according to claim 10, wherein:

said digital data are protected via an arrangement of said arithmetic and logic unit; and said digital data are processed in accordance with a network management protocol.

47. (Currently Amended) An apparatus ~~arrangement~~ according to claim 11, wherein:

said digital data are protected via an arrangement of said arithmetic and logic unit; and

said digital data are processed in accordance with a network management protocol.

48. (Currently Amended) An apparatus ~~arrangement~~ according to claim 12, wherein:

said digital data are protected via an arrangement of said arithmetic and logic unit; and

said digital data are processed in accordance with a network management protocol.